REMARKS

In response to the Official Action mailed May 8, 2003, Applicant amends his application and requests reconsideration. No claims are added or canceled so that claims 1-10 remain pending.

DRAWINGS

In the Official Action mailed May 8, 2003, the objection to the drawings made in the Official Action mailed November 20, 2002 was renewed. However, corrected drawings were submitted with the amendment filed February 20, 2003. It is uncertain whether those drawings have been accepted as meeting the requirements of the Draftsperson or if further drawings must be provided. The reference in the Official Action to a Petition for transferring drawings from a parent application is not understood since the present application does not claim any domestic priority.

THE INVENTION

The invention was described in the amendment filed February 20, 2003. The invention is easy to comprehend. The invention concerns a flashlight including a light bulb having a fixed operating voltage. This flashlight is typically used at a work site. For a number of years, various manufacturers of power tools have supplied tools powered by rechargeable batteries. As the technology of these cordless power tools has advanced, the voltage nominally supplied by the rechargeable power tool batteries has changed. In general, industrial quality power tools use batteries with higher voltages. Consumer-oriented power tools generally employ lower voltage batteries. On a typical work site, numerous rechargeable batteries producing various respective nominal output voltages are likely to be present. Typically, these batteries have similar mechanical characteristics so that a battery of a particular voltage may be electrically and mechanically connected to a power tool created for a different input voltage.

In the flashlight according to the invention, any of the available batteries on the work site may be employed to power the flashlight. All flashlight light bulbs have a fixed operating voltage. If the voltage applied is larger than the intended voltage, then the life of the light bulb is substantially shortened. If the voltage applied to the light bulb is below the fixed operating voltage of the light bulb, then the light bulb produces substandard illumination. However, on a work site, every voltage battery, and particularly a battery designed to operate a flashlight, may not be immediately available either in any form or as a recharged battery. Therefore, the flashlight may not be operated satisfactorily.

The invention solves this problem by providing a flashlight that includes an internal voltage regulator. The voltage regulator operates with whatever output voltage is produced by whichever battery happens to be available and charged as supplying the input voltage. The voltage regulator controls an output voltage that, regardless of whatever battery is connected, matches the fixed operating voltage of the light bulb of the flashlight.

THIS AMENDMENT

In this amendment several claims are amended strictly for clarity. In view of the rejection discussed below, there may be some uncertainty concerning the meaning of the words of claim 1, the sole pending independent claim. In order to reduce any possibility of misinterpretation, the claim is amended to make clear that, in the invention, whichever of the battery packs is present in the battery chamber of the flashlight, the voltage regulating circuit still outputs the fixed operating voltage of the light bulb. In addition to that clarification, several terms are fully recited each time they are mentioned to avoid any confusion in interpreting the claim language. Conforming changes are made to the dependent claims.

THE REJECTION

Claims 1-10 were rejected as unpatentable over Hopper (U.S. Patent 5,010,454) in view of Faulk (U.S. Patent 5,945,806). This rejection is respectfully traversed.

The comments concerning the rejection are, in some regards, confusing. It appears from the final paragraph on page 2 of the Official Action and the first full paragraph at page 3 that some errors have been made in interpreting what is disclosed by Hopper. It also appears that it is asserted that Hopper discloses all the elements of claim 1, although the rejection is for obviousness based upon the asserted combination of Hopper and Faulk. It is believed that the comments in the two cited paragraphs are intended to be interpreted in combination with the first two paragraphs on page 4 of the Official Action to explain the rejection.

In order to avoid misunderstanding or to conclude that Applicant acquiesces in the comments concerning Hopper that are believed to be incorrect, the following observations are made. In citing Hopper, the Examiner stated that the operating voltage of the light bulb 35 is 12 volts. (Column 4, lines 15-24 of Hopper.) There is no discussion found within Hopper concerning the operating voltage of the principal light bulb employed in Hopper's flashlight. What is stated in the cited passage is that Hopper's flashlight includes batteries that seem to be constantly charged when inserted into a recharging tray mounted on a motor vehicle. The batteries are recharged by the battery of the motor vehicle which, Hopper alleges, has a voltage ranging from 14.4 volts to 12 volts. According to lines 19 and 20 of Hopper, the voltage regulator employed supplies a stable 10

volts to the charging circuitry. This recharging voltage recharges batteries 92. Since the batteries are charged with a voltage of 10 volts, it can be assumed that the nominal voltage of the batteries being charged does not exceed 10 volts. Assuming the battery, when the flashlight is operated, is connected directly to the light bulb, then the light bulb presumably has an operating voltage of about 10 volts, rather than the 12 volts stated. The point of this observation is that there seems to be an error in this first assertion with regard to the disclosure of Hopper.

The Official Action also states that the voltage regulating circuit 90 in Hopper is within the casing that contains the batteries, as described in claim 1 of the patent application. There is no such disclosure in Hopper. As just described, Hopper provides a recharging tray 26, shown in Figure 9 of Hopper and described from column 3, line 63 through column 4, line 10 of Hopper. As described there, the batteries are received in that tray and are held in place by guide rails 70 that restrain flanges of the batteries. The terminals of the battery make connection at terminal strips 80 and 81. The tray is permanently mounted within a vehicle using the "fastener apertures 86". As described with respect to Hopper's Figure 12, the vehicle battery 88 is connected through the ignition switch 89 to the regulator 90. In other words, whenever the motor vehicle is operating, the batteries are potentially being charged.

Hopper never describes the location of the regulator 90 and the associated circuitry including two transistors and other circuit elements. In other words, Hopper never describes that the voltage regulating circuit is, as alleged in the Official Action, within the casing that contains the batteries. Therefore, Hopper fails to meet the cited limitation of claim 1 because, even assuming that Hopper's battery tray might be considered to correspond to the casing of the invention, Hopper does not disclose, or even suggest, that the voltage regulator is within that tray, i.e., casing.

The Examiner conceded that Hopper does not describe the electronic voltage regulating circuit of the invention that produces an output voltage that matches or essentially matches the fixed operating voltage of the light bulb, regardless of the voltage of the battery powering the light bulb. This part of the claimed invention cannot be met by Hopper for two reasons. First, the battery employed by Hopper only produces one output voltage, an output voltage that is clearly matched to the voltage of the light bulb. The battery voltage that varies in Hopper is not the voltage of the battery that powers the light bulb. Rather, it is the voltage of motor vehicle battery that is employed for recharging the flashlight battery.

Second, the voltage regulator employed in Hopper does not regulate the voltage of the battery that powers the flashlight. In order to use the flashlight in Hopper, as described by Hopper, the flashlight is withdrawn from the recharging tray that is fixed to a motor vehicle, and taken outside the tray, if not outside the motor vehicle. At that point, there is no connection between the battery powering the flashlight and the voltage regulator. By contrast, in the invention, the

electronic voltage regulating circuit is within the casing that contains whichever battery is in the casing so that the electronic voltage regulating circuit is always carried around with the flashlight. One of skill in the art would find no suggestion for changing the position of the voltage regulator in Hopper from the motor vehicle to the flashlight because the voltage regulator in Hopper has no function independent of the motor vehicle and its charging battery.

Faulk simply does not supply the elements of the invention as claimed in claim 1, and in dependent claims 2-10, that are missing from Hopper. In fact, what is disclosed by Faulk is exactly the opposite of what is achieved in the invention. Therefore, one of skill in the art would not even find a suggestion in Faulk for modifying Hopper.

Faulk is directed to eliminating a requirement in computer hardware of multiple different batteries producing different output voltages, as a sustaining power supply. As explained in the background of Faulk, there are many standards employed in the computer hardware industry for such batteries. There is no standard voltage provided by any such battery. Therefore, different manufacturers use batteries of different voltages, increasing the inventory of batteries required to replace and repair such computer hardware.

Faulk solves the problem of multiple non-standard batteries by employing a single standard battery producing a fixed output voltage in combination with a circuit that is preprogrammed, in senses an input voltage. That circuit then either steps ups or steps down the voltage of the standard battery to match the requirements of the computer hardware to which the Faulk circuitry is connected.

The contrast between the invention and Faulk can be briefly summarized. In the invention, in a flashlight, the flashlight can be powered with numerous different batteries producing respective different voltages because the voltage regulating circuit that is provided between the batteries and the light bulb regulates the output voltage supplied to the light bulb. The regulated output voltage is constant, essentially the rated operating voltage of the light bulb, regardless of the voltage of the battery supplying the voltage. In Faulk, a single battery producing a fixed output voltage is always employed, regardless of the load to which power is being supplied by the battery. Different loads have different voltage demands so that Faulk provides a circuit that alters the fixed voltage from the battery to supply the variable voltage required by each particular load, based upon sensed information or preprogrammed information. The invention has a variable voltage input and a fixed voltage output. Faulk has a fixed voltage input and a variable voltage output.

In relying upon Faulk, the Examiner directed attention to column 6, lines 50-58. The most pertinent lines in that passage are lines 54-58.

> A battery pack subsystem, comprising: one or more battery cells; and a power converter which is connected to ... selectively decrease or increase the voltage applied to external terminals during discharging; ....

This passage clearly emphasizes the inverse relationship of Faulk and the invention. In the invention it is made certain that the voltage supplied during discharging of the battery, i.e., operating of the light bulb, is maintained essentially constant, i.e., at the operating voltage of the light bulb. In Faulk, during discharging, the external voltage is not constant but is decreased or increased to meet the needs of the load.

No one of skill in the art would find a teaching within either of Hopper or Faulk for providing a constant output voltage from batteries of different voltages in order to power a flashlight efficiently and properly as in the invention. Moreover, no one would find a suggestion for modifying Hopper with Faulk for any reason. Therefore, the rejection is erroneous and, upon reconsideration, should be withdrawn.

Prompt and favorable action on the merits are earnestly solicited.

Respectfully submitted,

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